TSD-2020

V-Panel™ 20” HD Touch Screen Display

- *High-Definition 20” widescreen touch display*
- *Full HD 1920 x 1080 display resolution*
- *Quick-response capacitive touch screen*
- *Smooth, accurate on-screen writing using the included annotation pen*
- *High contrast and accurate color reproduction*
- *Ultra fast 5 ms speed response*
- *Ultra wide 178 degree viewing angles*
- *Fully HDCP compliant*
- *Built-in speakers*
- *Compatible with the DGE-2 Digital Graphics Engine or DVPHD Digital Video Processor*[1,6]
- *Compatible with DigitalMedia™ to support long wiring distances*[3,4]
- *Thin, lightweight design*
- *VESA 100x100 mountable*
- *Available wall mount kit and back box*[1]

The V-Panel™ TSD-2020 merges Crestron® touch screen control and high-definition video into one slim, lightweight touch screen display. Its 20” full HD 1080p display offers a spacious user interface for controlling AV, lighting, climate, and other technologies while simultaneously delivering excellent video performance as an HDTV or computer display. Its high-sensitivity capacitive surface affords exceptional touch response, whether using fingertip gestures or the included annotation pen.

The TSD-2020 is designed for use with a DGE-2 Digital Graphics Engine[1], providing an elegant and powerful touch screen control solution featuring advanced Smart Graphics™, dual-window HD video, high-performance H.264 streaming video, onboard multimedia and Web browsing, audio feedback, and built-in annotation. Together with the DGE-2, the TSD-2020 easily replaces separate touch screens, TV displays, and computer monitors to suit a broad range of residential and commercial applications. Its large screen makes it ideal as a home controller and television display in a kitchen or bedroom, as a presentation control panel for a university lecture hall, and as a video control surface for a corporate or government command center. For all kinds of uses, the TSD-2020 provides a perfect fit.

VESA Mounting

Its thin profile and VESA mount compatibility allow the TSD-2020 to be installed virtually anywhere using an off-the-shelf wall mounting bracket, desk stand, or articulating arm. In addition, the TSD-2020 ships with an easel-type stand for tabletop use, and includes a flip-out flap and tabs on its rear panel to allow for use as a low-angled or lay-flat tablet.

Wall Mounting

Using the optional Wall Mount Kit and Back Box (model TSD-2020-WMK-BB [1]) allows the TSD-2020 to be mounted cleanly on the wall with no visible plugs or wires.

Advanced Touch Screen Control

A Crestron touch screen offers an ideal user-interface for controlling all the technology in your home, boardroom, classroom, courtroom, or command center. Touch screens do away with piles of remote controls, cluttered wall switches, and cryptic computer screens, simplifying and enhancing the way you use technology. For controlling audio, video, lighting, shades, HVAC, security, and other systems, Crestron touch screens are fully-customizable with easy-to-use controls and icons, true feedback and real-time status display, full-motion video windows, and advanced navigation of digital media servers, tuners, and other devices.

Digital Graphics Engine

For a typical control application using the TSD-2020, a DGE-2 Digital Graphics Engine is also required.[1] The DGE-2 can be installed near the TSD-2020 or tucked away at the central equipment location. It provides connectivity for interfacing with centralized AV sources, switchers, and the control network while simultaneously providing a streamlined, long-distance wiring solution for the touch screen.

HDMI® & DigitalMedia™

The TSD-2020 features an HDMI input and USB HID port, allowing for direct connection to a DGE-2 over short distances up to approximately 10 ft (3 m).[2] A DigitalMedia 8G+® receiver and transmitter[1,3] may be used to extend the wiring distance between the touch screen and DGE-2 up to 330 ft (100 m).[4]

DigitalMedia (DM®) connectivity also opens up more ways to configure a touch screen control system. For instance, using a DM switcher such as the DM-MD8X8[1,3], multiple TSD-2020 touch screens can be connected to a single DGE-2, providing a simple, cost-effective way for multiple participants to view and control the same graphical interface. DigitalMedia

also provides a versatile means for distributing touch screen content to additional display devices and sound systems to serve a larger audience.

Smart Graphics™

Crestron touch screens use Smart Graphics to deliver the ultimate user experience *and* the ultimate value by enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled functionality. Using Smart Graphics, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, rich metadata, embedded apps and widgets, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Crestron Smart Graphics offers these enhancements and more:

- Cool-looking graphical buttons, sliders, knobs, and gauges that are intuitive and fun to use
- Kinetic effects to enhance the feeling of realism with lists and toolbars that scroll with momentum at the flick of a fingertip
- Drag-and-drop objects that snap into place, offering an easy way to switch sources
- Dashboard widgets to personalize the touch screen with clocks, weather, news, and other information
- Customizable themes allowing a completely different look and feel for every user, event, or season
- Fully-developed SmartObjects® that enable sophisticated control over complex devices with minimal programming

Embedded PC Applications

In combination with a DGE-2 graphics engine, the TSD-2020 provides everything you need to enjoy online music and videos, browse the Internet, and even review digital documents without a separate computer. With Microsoft® Internet Explorer® embedded, you have full access to the entire World Wide Web including sites that use Flash® or Java®. Windows Media® Player ensures broad compatibility for playing most types of digital media. Adobe® Acrobat® Reader and Microsoft PowerPoint®, Word, and Excel® document viewers complete the online experience, allowing you to download and view documents and presentations.

In addition, VNC Viewer support delivers enhanced cross-platform interaction with computers over the network or Internet, allowing remote access and control of desktop applications to unleash a host of possibilities for system integration and multimedia presentation.

HD Streaming Video

High-definition streaming video capability makes it possible to view security cameras and other video sources over the network right on the touch screen. Native support for H.264 and MJPEG formats allows the TSD-2020 and DGE-2[1] to display live streaming video from an IP camera, a streaming server (Crestron CEN-NVS200 or similar[1]), or a DigitalMedia switcher. And, through the embedded Web browser and media player, they support a wide variety of other streaming and downloadable video formats, enabling access to all kinds of content from media servers and Web sites like YouTube® and Netflix®[5].

Wired Video

In addition to handling streaming video, the TSD-2020 can simultaneously display up to two fully-scalable, full-motion video windows, each supporting HD or SD video and high-resolution computer signals from external sources. All connections are made at the DGE-2 using conventional HDMI, VGA, and BNC type cables.

HDCP Support

Industry-leading support for HDCP (High-bandwidth Digital Content Protection) ensures seamless compatibility with content-protected DVD, Blu-ray Disc®, digital HDTV, and multimedia computer sources.

On-Screen Keyboard

On-screen keyboard and mouse capabilities enable complete control of the embedded Web browser and other applications, and can also be used to control computers running TouchPoint® Virtual Mouse & Keyboard Software (VMK-WIN).

Real-Time Annotation

Whether conducting a high-level boardroom meeting, training seminar, or watching sports in your home theater, annotation helps put the fine point on any presentation. Built-in annotation provides the ability to illustrate your thoughts on-the-fly, letting you draw and write over high-definition video and computer images, and sketch out ideas on a whiteboard screen, without leaving the podium or your favorite chair while other viewers watch on the big screen.

Remote Annotation

Remote annotation capability allows multiple touch screen users to draw with their fingertips over the same video image or whiteboard screen, enabling enhanced interaction between several participants in a court-room, classroom, or council chamber.

Annotation Pen

The TSD-2020 enables smooth, accurate on-screen writing and drawing using the included annotation pen. Palm cancellation technology affords a natural feel while writing on the touch screen surface.

Presentation Output

Through an HDMI or DigitalMedia connection at the DGE-2, the TSD-2020 screen image can be sent to additional display devices, allowing videos, PowerPoint presentations, annotation, and other on-screen media to be shared with a live audience.

DVPHD Integration

In addition to the DGE-2, the TSD-2020 is also compatible with the award-winning DVPHD High-Definition Digital Video Processor[1], enabling the display of up to 8 simultaneous video windows along with HD touch screen graphics and annotation. The DVPHD supports high-definition video and computer signals from a wide variety of digital and analog sources.[3,6]

TSD-2020 V-Panel™ 20” HD Touch Screen Display

SPECIFICATIONS

Touch Screen Display

Display Type: TFT active matrix color LCD
Size: 19.5 inch (495 mm) diagonal
Aspect Ratio: 16:9 Full HD
Resolution: 1920 x 1080 pixels
Brightness: 250 nits (cd/m²)
Contrast: 3000:1
Response Time: 5 ms G-to-G
Color Depth: 24-bit, 16.7M colors
Illumination: Edgelit LED
Viewing Angle: ±89° horizontal, ±89° vertical
Touch Screen: Capacitive

Annotation Pen

Wireless touch pen, 2 mm wide tip, palm cancellation technology

Buttons & Indicators

Power/Menu: (1) Pushbutton, press to turn power on, press (while power is on) to access the onscreen menu, press for ≥2 seconds to turn power off
Power/Signal: (1) Dual color LED, green indicates power is on and an input signal is present, orange indicates power is on and no input signal is present
Note: If power is lost while the TSD-2020 is powered on, it will automatically return to the powered on state when power is restored.

Communications

USB: USB 1.1 Human Interface Device

Video

Input Signal Types: HDMI®, DisplayPort
Input Resolutions: 640x480@60Hz, 800x600@60Hz, 720x480@60Hz, 720x576@50Hz, 1024x768@60Hz, 1280x720@50Hz, 1280x720@60Hz, 1920x1080@50Hz, 1920x1080@60Hz

Refer to DGE-2 or DVPHD specifications for additional information.

Audio

Input Signal Types: HDMI, DisplayPort
Hardware Features: Built-in rear-facing amplified speakers
Amplification: 1 Watt x 2 channels

Refer to DGE-2 specifications for additional information.

Connectors

Headphone: (1) 3.5mm TRS mini phone jack;
Unbalanced stereo line-level or headphone audio output

HDMI: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input, also supports DVI[7]

DisplayPort: (1) 20-pin DisplayPort female;
DisplayPort digital video/audio input[8]

Micro-USB: (1) micro-USB type B, female;
USB 1.1 device port, 6 ft (1.8 m) micro-USB type B male to USB type A male cable included

DC-IN 19V: (1) DC power connector;
19 Volt DC power input, power pack included

Power Requirements

Power Pack: 19 Volts DC;
100-240 Volt AC, 50/60Hz power pack included

Environmental

Temperature: 32° to 95°F (0° to 35°C)
Humidity: 20% to 80% RH (non-condensing)
Heat Dissipation: 89 BTU/Hr

Enclosure

Plastic case, VESA 100x100 mm mountable (M4 screw size), 75° angled easel-type tabletop stand included, flip-out flap and tabs for 10° angled or lay-flat use, optional wall mount kit and back box available separately

Dimensions

Height: 10.82 in (275 mm)
Width: 18.26 in (464 mm)
Depth: 1.07 in (27 mm)

Weight

5.1 lb (2.3 kg);
6.4 lb (2.9 kg) with tabletop stand

MODELS & ACCESSORIES

Available Models

TSD-2020-B: V-Panel™ 20” VESA Mount HD Touch Screen Display, Black

Available Accessories

TSD-2020-WMK-BB: Wall Mount Kit and Back Box for TSD-2020
TSD-2020-PMK: Pre-Construction Mounting Kit for TSD-2020-WMK-BB
DGE-2: Digital Graphics Engine w/HDMI® and DM® CAT Connectivity
CBL Series: Crestron® Certified Interface Cables
DM-RMC-SCALER-C: DigitalMedia 8G+® Receiver & Room Controller w/Scaler
DM-TX-201-C: DigitalMedia 8G+® Transmitter 201
DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum
DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum
DM-8G-CONN: DigitalMedia 8G™ Cable Connector
DM-8G-CRIMP: Crimping Tool for DM-8G-CONN
DM-8G-CONN-WG: DigitalMedia 8G™ Cable Connector with Wire Guide

TSD-2020 V-Panel™ 20” HD Touch Screen Display

DM-8G-CRIMP-WG: Crimping Tool for DM-8G-CONN-WG
MP-WP181-C: Media Presentation Wall Plate - Crestron DigitalMedia 8G+®
MPI-WP181-C: Media Presentation Wall Plate - International Version - Crestron DigitalMedia 8G+®

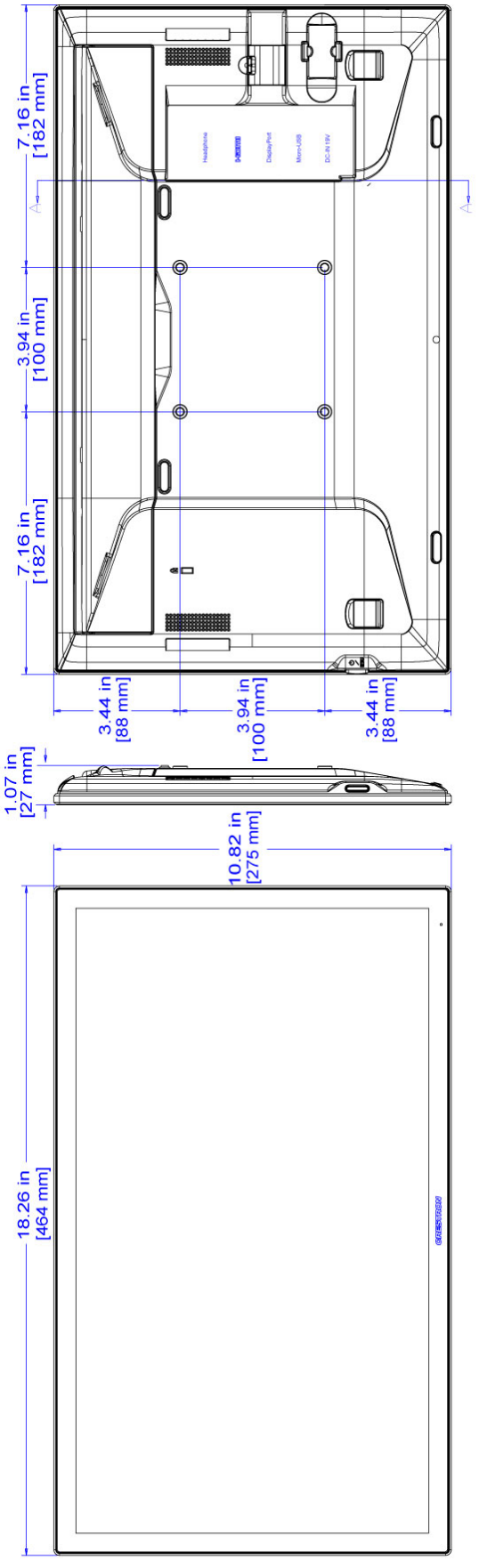
Notes:

1. Item(s) sold separately.
2. Ships with a 6 ft (1.8 m) USB cable only. HDMI cable sold separately.
3. For connection to a DGE-2 or DVPHD via DigitalMedia 8G+ (DM 8G+®), use a DM 8G+ receiver (DM-RMC-SCALER-C) at the touch screen location, and a DM 8G+ transmitter (DM-TX-201-C) at the DGE-2 or DVPHD. For connection to a DM switcher, any type of DM receiver may be used provided the receiver includes a USB HID host port. Besides DM 8G+, Crestron offers other ways to extend HDMI and USB signals. Consult the Crestron Website or contact a Crestron representative for additional options.
4. For DigitalMedia 8G+ (DM 8G+) wiring, use Crestron DM-CBL-8G DigitalMedia 8G Cable or third-party CAT5e (or better) UTP or STP. The maximum wire length for DM 8G+ is 330 ft (100 m). Refer to the Crestron DigitalMedia Design Guide, Doc. #4546 for DM system design guidelines.
5. Accessing Netflix content requires an active Netflix account. See www.netflix.com for details.
6. DVPHD does not support audio, streaming media, Web browsing, or other embedded PC functionality.
7. The HDMI input requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cables are available separately.
8. The DisplayPort input only supports native DisplayPort signals. To connect an HDMI source to this input, an active HDMI-to-DisplayPort converter must be used. The DisplayPort input automatically overrides the HDMI input when a DisplayPort signal is connected.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: patents.crestron.com.

Crestron, the Crestron logo, DigitalMedia, DigitalMedia 8G, DigitalMedia 8G+, DM, DM 8G+, Smart Graphics, SmartObjects, TouchPoint, and V-Panel are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Acrobat, Adobe, and Flash are either trademarks or registered trademarks of Adobe Systems Incorporated in the United States and/or other countries. Blu-ray Disc is either a trademark or registered trademark of the Blu-ray Disc Association in the United States and/or other countries. YouTube is either a trademark or registered trademark of Google Inc. in the United States and/or other countries. HDMI is either a trademark or registered trademark of HDMI Licensing LLC in the United States and/or other countries. Excel, Internet Explorer, Microsoft, PowerPoint, and Windows Media are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Netflix is either a trademark or registered trademark of Netflix, Inc. in the United States and/or other countries. Java is either a trademark or registered trademark of Oracle America, Inc. in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography. Specifications are subject to change without notice. ©2015 Crestron Electronics, Inc.



Crestron Electronics, Inc. 15 Volvo Drive | Rockleigh, NJ 07647
Tel: 800.237.2041 / 201.767.3400 | Fax: 201.767.1903
www.crestron.com

All brand names, product names and trademarks are the property of their respective owners.
©2015 Crestron Electronics, Inc.